

[19]中华人民共和国专利局

[51]Int.Cl⁶

H04B 7/26



[12] 发明专利申请公开说明书

[21] 申请号 97190987.3

[43]公开日 1998 年 11 月 4 日

[11] 公开号 CN 1198274A

[22]申请日 97.6.26

[30]优先权

[32]96.6.27 [33]JP[31]167054/96

[86]国际申请 PCT/JP97/02215 97.6.26

[87]国际公布 WO97/50197 日 97.12.31

[85]进入国家阶段日期 98.3.27

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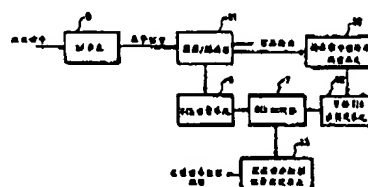
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权利要求书 2 页 说明书 8 页 附图页数 4 页

[54]发明名称 发送功率控制器

[57]摘要

接收信号的误码率由接收信号误码检测单元 32 检测, 以及目标 SIR 值由目标 SIR 值判定单元根据误码率来改变。也可用一帧中的 CRC 信号在帧单元中检测接收信号的误码率。并且, 还可通过检测插入恒定时隙中的已知导频信号的误码来检测接收信号的误码率。



(BJ)第 1456 号

TRANSMITTED POWER CONTROLLER

Patent number: WO9750197
Publication date: 1997-12-31
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Classification:
- **International:** H04B7/26
- **European:** H04B7/005B1K; H04B7/005B2; H04B7/005B2E;
H04L1/00A; H04L1/20
Application number: WO1997JP02215 19970626
Priority number(s): JP19960167054 19960627

Also published as:

EP0853393 (A1)
US6341224 (B1)
EP0853393 (A4)
EP0853393 (B1)
DE69729784T (T2)

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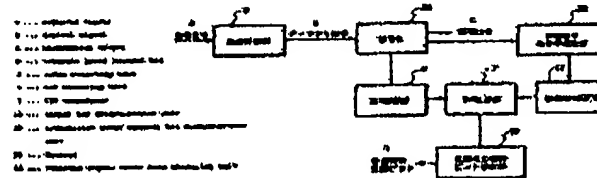
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Abstract of WO9750197

An error rate of a received signal is measured in a reception signal error measuring unit (32), and a target SIR value is changed in a target SIR determination unit (12) in accordance with this error rate. This error rate of a received signal can also be detected frame by frame by using a sent CRC signal which is an error detecting code added to each frame. The error rate of a received signal can also be detected by detecting an error of a known pilot signal inserted at predetermined intervals.



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TRANSMITTED POWER CONTROLLER

Claims of corresponding document: **EP0853393**

1. A transmission power controller of at least one of a base station and a mobile station in a mobile communication system including said base station and said mobile station, comprising:

means for measuring a received SIR (signal-to-interference plus noise power ratio);
means for comparing a measurement result of said received SIR with a predetermined target value of SIR;

means for outputting transmission power control information to an opposing station according to said comparison result;
means for receiving and demodulating said transmission power control information transmitted from opposing station;
means for controlling transmission power of own station according to said demodulated transmission power control information;
error/rate measuring means for measuring an error rate of received signal; and
means for changing said SIR target value according to measurement of said received signal error rate.

2. The transmission power controller as claimed in Claim 1, wherein said error rate measuring means comprises:

means for detecting presence of a frame error by detecting a CRC (cyclic redundancy check) bit added to wireless frame signal;
means for counting the number of said frame errors in an optional measuring time; and
means for comparing said number of measured frame errors with a predetermined frame error number setting value.

3. The transmission power controller as claimed in Claim 1, wherein said error rate measuring means comprises:

means for detecting presence of a frame error by detecting a CRC bit added to wireless frame signal;
means for determining a moving average of errors in an optional number of frames using said frame errors; and
means for comparing moving average of said measured errors with a predetermined setting value of frame errors independently of period of said optional number of frames.

4. The transmission power controller as claimed in Claim 2 or 3, wherein said means for changing said received SIR target value:

makes an instruction to decrease said SIR target value by a predetermined step width when number of measured frame errors or a moving average thereof is smaller than a setting value, and makes an instruction to increase said SIR target value by a predetermined step width when the number of frame errors or a moving average thereof is greater than a setting value.

5. The transmission power controller as claimed in Claim 1, wherein said error rate measuring means comprises:

means for detecting bit errors of known pilot signals inserted at a predetermined interval in wireless frame;
means for counting said number of bit errors in an optional measuring time; and
means for comparing said measured number of bit errors with a predetermined bit error number setting value.

6. The transmission power controller as claimed in Claim 1, wherein said error rate measuring means comprises:

means for detecting bit errors of pilot signals inserted at a predetermined interval in wireless frame signal;

means for determining a moving average of bit errors in an optional period using said bit errors; and means for comparing moving average of said measured errors with a predetermined setting value of bit errors independently of said optional period.

7. The transmission power controller as claimed in Claim 5 or 6, wherein said means for changing said received SIR target value:

makes an instruction to decrease said SIR target value by a predetermined step width when number of bit errors in measured pilot signals or a moving average thereof is smaller than a setting value, and makes an instruction to increase said SIR target value by a predetermined step width when the number of bit errors or a moving average thereof is greater than a setting value.

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TRANSMITTED POWER CONTROLLER

Claims of corresponding document: EP0853393

1. A transmission power controller of at least one of a base station and a mobile station in a mobile communication system including said base station and said mobile station, comprising:

means for measuring a received SIR (signal-to-interference plus noise power ratio);
means for comparing a measurement result of said received SIR with a predetermined target value of SIR;

means for outputting transmission power control information to an opposing station according to said comparison result;

means for receiving and demodulating said transmission power control information transmitted from opposing station;

means for controlling transmission power of own station according to said demodulated transmission power control information;

error/rate measuring means for measuring an error rate of received signal; and

means for changing said SIR target value according to measurement of said received signal error rate.

2. The transmission power controller as claimed in Claim 1, wherein said error rate measuring means comprises:

means for detecting presence of a frame error by detecting a CRC (cyclic redundancy check) bit added to wireless frame signal;

means for counting the number of said frame errors in an optional measuring time; and

means for comparing said number of measured frame errors with a predetermined frame error number setting value.

3. The transmission power controller as claimed in Claim 1, wherein said error rate measuring means comprises:

means for detecting presence of a frame error by detecting a CRC bit added to wireless frame signal;

means for determining a moving average of errors in an optional number of frames using said frame errors; and

means for comparing moving average of said measured errors with a predetermined setting value of frame errors independently of period of said optional number of frames.

4. The transmission power controller as claimed in Claim 2 or 3, wherein said means for changing said received SIR target value:

makes an instruction to decrease said SIR target value by a predetermined step width when number of measured frame errors or a moving average thereof is smaller than a setting value, and makes an instruction to increase said SIR target value by a predetermined step width when the number of frame errors or a moving average thereof is greater than a setting value.

5. The transmission power controller as claimed in Claim 1, wherein said error rate measuring means comprises:

means for detecting bit errors of known pilot signals inserted at a predetermined interval in wireless frame;

means for counting said number of bit errors in an optional measuring time; and

means for comparing said measured number of bit errors with a predetermined bit error number setting value.

6. The transmission power controller as claimed in Claim 1, wherein said error rate measuring means comprises:

means for detecting bit errors of pilot signals inserted at a predetermined interval in wireless frame signal;

means for determining a moving average of bit errors in an optional period using said bit errors; and means for comparing moving average of said measured errors with a predetermined setting value of bit errors independently of said optional period.

7. The transmission power controller as claimed in Claim 5 or 6, wherein said means for changing said received SIR target value:

makes an instruction to decrease said SIR target value by a predetermined step width when number of bit errors in measured pilot signals or a moving average thereof is smaller than a setting value, and makes an instruction to increase said SIR target value by a predetermined step width when the number of bit errors or a moving average thereof is greater than a setting value.

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